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89
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Introduction

Skills and Expertise

Functional Analysis | Mathematical Modelling

Current institution

Institute of Mathematics and Physics
Mathematics section · Porto-Novo, Benin

Aboubacar Marcos's Lab

Publications

Publications (23)

Multiple solutions for a parametric Steklov problem involving the p (x) -Laplacian operator

Article Full-text available

Jan 2025

Electronic journal of qualitative theory of differential equations

Abdou Aboubacar · Mohamed Karimou Gazibo · Aboubacar Marcos

In this paper, we study the existence and multiplicity of weak solutions for a Steklov problem involving p (x) -Laplacian operator in a bounded domain Ω ⊂ R N (N ≥ 2) with smooth boundary ∂ Ω . The boundary equation is perturbed with some weight functions belonging to approriate generalized Lebesgue spaces and two real parameters. Our arguments...

View

Exponential stabilisation of piezoelectric materials via an electromagnetic field

Article

Nov 2024

International Journal of Control

Bidouan Romziath · Abdou Sène · Aboubacar Marcos

View

On eigenvalue problems for the p(x)-Laplacian

Article

Jul 2024

Journal of Mathematical Analysis and Applications

Aboubacar Marcos · Janvier Soninhekpon

View

On eigenvalues problems for the p(x)-Laplacian

Preprint Full-text available

Jul 2023

Aboubacar Marcos · Janvier Soninhekpon

This paper studies nonlinear eigenvalues problems with a double non homogeneity governed by the $p(x)$-Laplacian operator, under the Dirichlet boundary condition on a bounded domain of $\mathbb{R}^N(N\geq2)$. According to the type of the nonlinear part (sublinear, superlinear) we use the Lagrange multiplier's method, the Ekeland's variational princ...

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On the First Curve in the Fučik Spectrum of a Mixed Problem

Chapter

Oct 2020

Jean-Pierre Gossez · Aboubacar Marcos

View

Existence of Positive Solutions and Asymptotic Behavior for Evolutionary q (x)-Laplacian Equations

Article Full-text available

Jul 2020

Discrete Dynamics in Nature and Society

Aboubacar Marcos · Soglo Ambroise

In this paper, we extend the variational method of M. Agueh to a large class of parabolic equations involving q (x)-Laplacian parabolic equation $\partial \rho t , x / \partial t = \operatorname{div} x \rho t , x \nabla x G ' \rho + V q x - 2 \nabla x G ' \rho + V$. The potential V is not necessarily smooth but belongs to a Sobolev space W 1 , ∞ Ω . Given the initial datum ρ 0 as a probability den...

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Solutions of a Class of Degenerate Kinetic Equations Using Steepest Descent in Wasserstein Space

Article Full-text available

Jun 2020

Journal of Mathematics

Soglo Ambroise · Aboubacar Marcos

We use the steepest descent method in an Orlicz–Wasserstein space to study the existence of solutions for a very broad class of kinetic equations, which include the Boltzmann equation, the Vlasov–Poisson equation, the porous medium equation, and the parabolic p-Laplacian equation, among others. We combine a splitting technique along with an iterati...

View

Finsler structure for variable exponent Wasserstein space and gradient flows

Preprint Full-text available

Dec 2019

Aboubacar Marcos · Soglo Ambroise

In this paper, we propose a variational approach based on optimal transportation to study the existence and unicity of solution for a class of parabolic equations involving $q(x)$-Laplacian operator \begin{equation*}\label{equation variable q(x)} \frac{\partial \rho(t,x)}{\partial t}=div_x\left(\rho(t,x)|\nabla_x G^{'}(\rho(t,x))|^{q(x)-2}\nabla_x...

View

Existence of solutions for a nonhomogeneous Dirichlet problem involving p (x) p(x) -Laplacian operator and indefinite weight

Article Full-text available

Dec 2019

Boundary Value Problems

Aboubacar Marcos · Abdou Aboubacar

We obtain multiplicity and uniqueness results in the weak sense for the following nonhomogeneous quasilinear equation involving the p(x)-Laplacian operator with Dirichlet boundary condition: −Δp(x)u+V(x)|u|q(x)−2u=f(x,u)in Ω,u=0 on ∂Ω, where Ω is a smooth bounded domain in RN, V is a given function with an indefinite sign in a suitable variable exp...

View

Weighted Steklov problem under nonresonance conditions

Article Full-text available

Oct 2018

Boletim da Sociedade Paranaense de Matematica

Jonas Doumatè · Aboubacar Marcos

We deal with the existence of weak solutions of the nonlinear problem $-\Delta_{p}u+V|u|^{p-2}u$ in a bounded smooth domain $\Omega\subset \mathbb{R}^{N}$ which is subject to the boundary condition $|\nabla u|^{p-2}\frac{\partial u}{\partial \nu}=f(x,u)$. Here $V\in L^{\infty}(\Omega)$ possibly exhibit both signs which leads to an extension of part...

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Efficiency Analysis of Public Transportation Subunits Using DEA and Bootstrap Approaches -- Dakar Dem Dikk Case Study

Article Full-text available

Nov 2016

Journal of Mathematics Research

Oumar Sow · Amar Oukil · Babacar Mbaye Ndiaye · Aboubacar Marcos

Transportation is a sector which plays an important role in the process of development of countries around the world. A crucial step in transportation planning process is the measure of the efficiency of transportation systems in order to guarantee the desired service. This paper investigates the relative efficiencies of lines of the main public tr...

View

Asymmetric Steklov problems with sign-changing weights

Article

May 2015

Journal of Mathematical Analysis and Applications

Jonas Doumatè · Liamidi Arèmou Leadi · Aboubacar Marcos

We study two asymmetric Steklov problems with indefinite weights involving the p-Laplacian operator. We prove the existence of a first nontrivial eigenvalue for the first problem and the second one serves as an application in the description of the beginning of the Fučik spectrum with weights. We thereby extend several known results related to thes...

View

A weighted eigencurve for Steklov problems with a potential

Article

Jun 2013

Nonlinear Differential Equations and Applications NoDEA

Liamidi Arèmou Leadi · Aboubacar Marcos

In this work, we study the existence of the principal eigencurves for a Steklov problem with an indefinite weight for homogeneous perturbation of the p-Laplacian operator. We then establish many properties of these eigencurves: continuity, differentiability and asymptotic behaviors. We also use our approach to get similar result when mixed Dirichle...

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Maximum principle and existence results for nonlinear cooperative systems on a bounded domain

Article Full-text available

Jun 2011

Electronic Journal of Differential Equations

Liamidi Arèmou Leadi · Aboubacar Marcos

In this work we give necessary and sufficient conditions for having a maximum principle for cooperative elliptic systems involving p-Laplacian operator on a bounded domain. This principle is then used to yield solvability for the considered cooperative elliptic systems by an approximation method.

View

A maximum principle for nonlinear cooperative elliptic systems on $\mathbb{R}$ N

Article

Jun 2011

Journal of Partial Differential Equations

Liamidi Arèmou Leadi · Aboubacar Marcos

We investigate in this work necessary and sufficient conditions for having a maximum principle for a cooperative elliptic system on the whole $\mathbb{R}$ N . Moreover, we prove the existence of solutions by an approximation method for the considered system.

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Maximum principle and existence results for elliptic systems on R^N

Article Full-text available

May 2010

Electronic Journal of Differential Equations

Liamidi Arèmou Leadi · Aboubacar Marcos

In this work we give necessary and sufficient conditions for having a maximum principle for cooperative elliptic systems involving p-Laplacian operator on the whole $mathbb{R}^{N}$. This principle is then used to yield solvability for the cooperative elliptic systems by an approximation method.

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Solvability of a one-dimensional quasilinear problem under nonresonance conditions on the potential

Article Full-text available

Jan 2009

Electronic journal of qualitative theory of differential equations

Aboubacar Marcos

Problem of the type -Δpu = f(u) + h(x) in {a, b} with u = 0 on {a, b} is solved under nonresonance conditions stated with respect to the first eigenvalue and the first curve in the Fucik spectrum of (-Δp, W0,p(a,b)), only on a primitive of f.

View

Nonresonance conditions on the potential for a semilinear Dirichlet problem

Article

Jan 2009

Nonlinear Analysis

Aboubacar Marcos

Problem −u″=g(u)+h(x)in(a,b) with u=0 on {a,b} is solved under new nonresonance conditions between the first eigenvalue and the first curve in the Fučik spectrum of the associated linear problem.

View

On the First Curve in the FučiK Spectrum with Weights for a Mixed p-Laplacian

Article Full-text available

Jan 2007

International Journal of Mathematics and Mathematical Sciences

Liamidi Arèmou Leadi · Aboubacar Marcos

We show the existence of a first curve in the Fučik spectrum with weights for the p-Laplacian under mixed boundary conditions. We also study the asymptotic behavior of this first curve.

View

On the First Curve in the FuÃ„ÂiK Spectrum with Weights for a Mixed p-Laplacian

Article

Jan 2007

Liamidi Arèmou Leadi · Aboubacar Marcos

We show the existence of a first curve in the FuÃ„Âik spectrum with weights for the p-Laplacian under mixed boundary conditions. We also study the asymptotic behavior of this first curve.

View

Existence of solutions for a semilinear two-point boundary value problem

Article

Sep 2001

Nonlinear Analysis

Aboubacar Marcos

The existence of solutions for the boundary value problems when only the asymptotic behaviour of G with respect to the Fučik spectrum is known was stated. Such a result was obtained for the corresponding periodic problem for any h measurable and bounded. The Dirichlet where h is any Lebesgue integrable function remains an open problem. The proof wa...

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Research Article On the First Curve in the FuciK Spectrum with Weights for aMixedp-Laplacian

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Liamidi Arèmou Leadi · Aboubacar Marcos

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